

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference EL/2-22695/CGC 2119	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/ 05698	International filing date (day/month/year) 30/05/2003	(Earliest) Priority Date (day/month/year) 06/06/2002
Applicant CIBA SPECIALTY CHEMICALS HOLDING INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

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International application No.
PCT/EP 03/05698

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1 (part), 2 (part), 3 (part), 5 (part), 7, 10 (part)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: -

The initial phase of the search revealed a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it is impossible to determine which parts of claim 10 may be said to define subject-matter for which protection might legitimately be sought (Article 6 PCT). For these reasons, a meaningful search over the whole breadth of claim 10 is impossible. Consequently, in case of claim 10 the search has been restricted to 2H-benzotriazoles of formula (I) comprised in an electroluminescent device.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1 (part), 2 (part), 3 (part), 5 (part), 7, 10 (part)

An electroluminescent device, comprising a 2H-benzotriazole compound of the formula (II) and the compound of the formula (II).

2. claims: 1 (part), 2 (part), 3 (part), 5 (part), 6 (part), 8, 9, 10 (part)

An electroluminescent device, comprising a 2H-benzotriazole compound of the formula (III), (V), (VI) and a 2H-benzotriazole compound of the formula (III), (V), (VI).

3. claims: 1 (part), 2 (part), 4, 5 (part), 6 (part), 10 (part)

An electroluminescent device, comprising a 2H-benzotriazole compound of the formula (IV) and a 2H-benzotriazole compound of the formula (IV).

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/05698

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H05B33/14 H01L51/20 C09K11/06 C07D403/10 C07D405/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H05B H01L C09K C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 866 110 A (TOYO INK MFG CO) 23 September 1998 (1998-09-23) cited in the application * Table 3, page 38, compound 41 *	1,2,10
A	* the entire document *	3,5,7
X	US 5 104 740 A (SHINKAI MASANAO ET AL) 14 April 1992 (1992-04-14) cited in the application * column 10, compound No. 90 *	1-3,10
A	* the entire document *	5,7
X	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 05, 31 May 1999 (1999-05-31) & JP 11 040355 A (TOYO INK MFG CO LTD), 12 February 1999 (1999-02-12) * page 18, compound No. 66, abstract *	1,2,10
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

9 September 2003

Date of mailing of the international search report

17. 11. 03

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/05698

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 518 824 A (FUNHOFF DIRK ET AL) 21 May 1996 (1996-05-21) cited in the application * column 5, benzotriazole compound *	1-3,10
X	EP 0 764 712 A (BAYER AG) 26 March 1997 (1997-03-26) cited in the application * page 4, Table 1, compounds 6-10 *	1-3,10
X	TSUTSUI ET AL.: "Revisit on the Role of Oxadiazole Hole Blocking Layer in Organic Multilayer Electroluminescent Devices" SYNTHETIC METALS, vol. 85, 1997, pages 1201-1204, XP002253648 cited in the application * page 1202, Figure 1, quencher compound TIN *	1-3,10
X	US 5 629 389 A (ROITMAN DANIEL B ET AL) 13 May 1997 (1997-05-13) cited in the application * column 2, lines 51-52 *	1-3,10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/05698

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0866110	A	23-09-1998	JP 10251633 A	22-09-1998
			EP 0866110 A1	23-09-1998
			EP 0934992 A1	11-08-1999
			US 6280859 B1	28-08-2001
			US 2001033944 A1	25-10-2001

US 5104740	A	14-04-1992	JP 3000792 A	07-01-1991
			JP 5029675 B	06-05-1993

JP 11040355	A	12-02-1999	NONE	

US 5518824	A	21-05-1996	DE 4325885 A1	09-02-1995
			CN 1103230 A	31-05-1995
			DE 59407212 D1	10-12-1998
			EP 0637899 A1	08-02-1995
			ES 2122108 T3	16-12-1998
			JP 7114987 A	02-05-1995

EP 0764712	A	26-03-1997	DE 19535063 A1	27-03-1997
			CA 2185878 A1	22-03-1997
			CN 1159131 A	10-09-1997
			EP 0764712 A2	26-03-1997
			JP 9125054 A	13-05-1997

US 5629389	A	13-05-1997	JP 9106889 A	22-04-1997
